

ATTACHMENT 6

GULLY EROSION

Controlling Erosion with Branches



Tree branches are often a practical and effective material for controlling gully erosion, however, branch placement can be crucial to success. Branches should be placed with their butt ends down slope (see photo above) so the smaller branches can obstruct water flow, protect the gully surface soil, and trap sediment. When branches are placed with their butt ends up slope a common result is additional down-cutting and up slope migration of the head cut (see photo below).



Attachment 6: Gully Erosion



Various techniques have been used in attempt to control gully erosion on grazing land. Items such as old posts, wire and other available material are commonly deposited into gullies. The type of material and the way it is placed into the gully is important to success in preventing down cutting and movement of the head-cut farther up slope. When miscellaneous items are haphazardly tossed into a gully, water usually find a place it can flow under or around the material allowing down cutting and head-cut migration to continue. The first goal for placing material in a gully should be to dissipate the water flow rate with obstructions. This allows material in contact with the gully surface to stabilize the soil and trap sediment and other material. To achieve the ultimate goal of vegetative stabilization the gully must be wide enough that the banks have a relatively gentle slope.



Stabilizing a Gully Head Cut



First, the head (up slope end) of the gully should be filled with small branches. Remember to place the butt end of the branches at the down slope end of the gully. Placing the branches so the forks are facing up slope will help to dissipate the energy of flowing water and help to catch organic debris and sediment.



Next, larger branches should be placed on top of the small ones to help force them down so more forked branches make contact with the bottom and lower side walls of the gully.



Larger limbs or the trunks of small trees can then be place on top of the smaller branches to secure them in place and divert livestock if trailing is contributing to the erosion problem.

Gully Side Wall Stabilization



It is common for the side walls of a gully to, over time, migrate laterally after the lower portion becomes vegetated. This type of erosion will continue until the slope of the bank wall is such that vegetation can grow and stabilize the area. Livestock can contribute to this type of erosion by rubbing on the banks and trampling the area. Suggested treatment for eroding banks down slope from a gully head cut is similar to that for a head cut. Smaller branches are placed on the bank and then large branches or small trees are used to help hold them in place. The large branches can also serve as a temporary barrier to livestock, helping established plants to become more vigorous and spread into disturbed areas.



